

Arctic Pollution

The AMAP 2002 assessment

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The AMAP 2002 Assessment Background

- **The first AMAP Assessment was published 1997**
- **AMAP was asked to provide an update for assessment on**
 - **Persistent organic pollutants (POPs)**
 - **Heavy metals (HM)**
 - **Radioactivity**
 - **Human Health**
 - **Pathways**

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Process of the assessment

- **The assessment is summary of scientific reports**
- **The scientific reports are based on national data provided to the scientist conducting the assessment and data from peer reviewed international scientific literature.**
- **Because of newly provided information regarding intake of Cs 137 through food an reassessment is conducted in cooperation with GCI and other involved parties.**

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Questions considered

- **Are the conclusions from 1997 still valid?**
- **Did the 1997 assessment overestimate the problems?**
- **Were action taken that arctic has benefited from?**
- **What are the potential threats?**

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Are the conclusions from 1997 still valid?

- **Yes**
- **General; The arctic remain a clean environment in comparison with most other areas**
- **POPs; It is at least as important to address the sources outside the arctic as the one within**
- **HM; Up to 1/3 comes from industry outside the arctic**
- **Radioactivity; The main fresh input comes from reprocessing facilities in West Europe**
- **Predatory birds and marine mammals that are high in the food chain are most at risk**
- **Levels of some contaminants seems to be going down while trends for other is uncertain or increasing**

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Are the conclusions from 1997 still valid?

- **Human exposure**
- **The diet is the main intake way of contaminants**
- **Exposure of persistent organic pollutants is the primary concern. They accumulate in marine food web.**
- **The main exposure route for radionuclides are through the atmosphere**
- **Mercury accumulate in marine food web and from there into the diet**

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Has Arctic benefited from the actions?

- **Yes**
- **The protocols on POPs and Heavy Metal to United Nation Economic Commission for Europe on Long-range Transboundary Air Pollution (LRTAP Convention)**
- **The Stockholm convention on Persistent Organic Pollution**
- **Global assessment on mercury by UNEP**
- **Decrease in lead due to less use of leaded gasoline**

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Did the 1997 overestimate the problems?

- **No**
- **There are clearer and stronger evidence that current exposure to existing mixture of contaminants are causing subtle adverse effect in wild life and humans**
- **The levels of some banned POPs are declining, but there is indication of fresh input of some of those POPs**
- **The fresh input of radionuclides into the Arctic marine environment comes from reprocessing facilities in Western Europe**
- **The global emission of mercury is increasing, and so is the deposition in Arctic in connection with arctic sunrise**
- **Climatic change can cause changes on the pathways and behavior of contaminants**

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What are the potential threats?

- **The potential threats are:**
- **Continued production and use of ‘old’ and introduction of ‘new’ POPs**
- **Increased emission of heavy metals, especially mercury**
- **Accidental release of radionuclides to the atmosphere**

The AMAP 2002 Assessment Recommendations

- **POPs**
- **Follow the levels, trends and effects of already controlled POPs to see the effectiveness of the actions taken**
- **Detect levels, trends and effects of ‘new’ POPs,**
- **Heavy metals**
- **Improve emission data on and investigate the mercury budget in the Arctic**
- **Follow the levels, trends and effects of mercury**
- **Sources**
- **Provide better information on sources of contaminants**

The AMAP 2002 Assessment Recommendations

- **Radioactivity**
- **Follow certain radionuclides and their effects on the Arctic**
- **Perform risk assessment prior to action related to threats from nuclear installation and handling of nuclear waste**
- **Changing Pathways**
- **Study the effects of global climatic changes or climate variability on the transport and behavior of contaminants to and within the Arctic**

The AMAP 2002 Assessment Recommendations

- **Human health**
- **Consumption of traditional food should continue, the benefits of traditional food outweighs the risk**
- **Breastfeeding should continue; the benefits outweighs the risks**
- **The Arctic human health should be taken into account in considerations of global actions against POPs and mercury**
- **Continue the monitoring of human exposure to contaminants in order to get better estimation of risk**

The AMAP 2002 Assessment Messages from the symposium

- **It is necessary to give balanced information and include risk – benefit analysis in the assessment, especially when dealing human health**
- **Communication has to be two way**
- **The information to indigenous people has to conveyed in such way that they can use it for their best interest**
- **All advise to local populations has to go through either national or local authorities**
- **Artic human health has to be taken into account in considerations of global actions against POPs and mercury**
- **Study of human health has to take into account social behavior, economic status and culture**